



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VIII

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DENVER, COLORADO 80202-2466

JUL - 9 1996

Ref: 8P2-W

Mr. Dennis Fewless  
Director  
Division of Water Quality  
North Dakota Dept. of Health  
1200 Missouri Avenue  
Bismarck, North Dakota 58505

RE: Approval of North Dakota's  
Revised 1422 UIC Program  
Description

Dear Mr. Fewless:

The Environmental Protection Agency (EPA) has reviewed and formally approves your revised Program Description as a modification of the North Dakota Department of Health's Underground Injection Control Program. Pursuant to 40 CFR 145.32, this program modification is considered "nonsubstantial" and becomes effective immediately.

A great deal of credit goes to Dave Glatt and his staff for all their hard work in preparing this document and successfully addressing EPA's comments on previous drafts.

Sincerely,

Stephen S. Tuber  
Director  
Water Program  
Office of Pollution Prevention,  
State, and Tribal Assistance

cc: Dave Glatt  
Scott Redig



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North Dakota Department of Health  
Environmental Health Section  
Division of Water Quality

**UIC**

**Underground Injection Control  
Program Description**

Prepared by

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May 1996

Dr. Jon R. Rice, State Health Officer



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# NORTH DAKOTA UNDERGROUND INJECTION CONTROL PROGRAM (1422) DESCRIPTION

North Dakota Department of Health  
Division of Water Quality

## I. INTRODUCTION

The Safe Drinking Water Act of 1974 (as amended), established minimum requirements, technical criteria, and standards for Underground Injection Control (UIC) programs to protect underground sources of drinking water (USDW). The UIC program is administered by the United States Environmental Protection Agency (EPA). Under these regulations, the state of North Dakota received program implementation primacy in 1984, and has since operated an EPA-approved UIC program.

This program description identifies the current status of the UIC program in North Dakota. It includes the July 25, 1988 program amendments which did not change state program responsibilities nor the original intent of the UIC program. The section titled *Technical Requirements for UIC Permits* has been removed from this program description to be included in a document called *Standard Operating Procedures for Groundwater Monitoring*, (North Dakota Department of Health, in revision 1996).

The North Dakota Department of Health has been designated as the lead agency responsible for administering grant funds and coordinating UIC program activities for Class I, Class III, Class IV, and Class V wells. The Class II program is administered by the Oil and Gas Division of the State Industrial Commission and is not addressed as part of this program description.

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## II. OVERVIEW OF THE STATE UIC PROGRAM

The UIC program is an important part of the State Groundwater Protection Strategy. With increasing groundwater use and the impact of economic development on groundwater, the control of subsurface injections is vital to maintaining the quality of the state's groundwater resources.

North Dakota received UIC program primacy from EPA in October 1984, to regulate Class I through Class V injection wells. The North Dakota UIC program is administered by three separate state agencies, each with their own legislative authority to regulate specific types of injection well activities.

The state agencies and statutory authority for each class of well are as follows:

### A. The North Dakota Department of Health, Division of Water Quality

The Division of Water Quality has been designated as the lead agency for coordination of the 1422 UIC program and administration of the annual federal UIC grant. The Division of Water Quality has authority to regulate Class I (hazardous and nonhazardous), Class IV, and Class V injection wells, as identified, under Chapter 33-25-01 of the North Dakota Administrative Code (Underground Injection Control Program). Class V wells are authorized by rule but may be required to obtain a permit under special circumstances.

### B. The North Dakota Geological Survey, a division of the State Industrial Commission.

The North Dakota Geological Survey has statutory authority to regulate Class III injection wells. The rules which govern Class III injection wells are contained in Chapter 43-02-02.1 of the North Dakota Administrative Code (Underground Injection Control Program).

Under the North Dakota UIC program, all Class I hazardous and nonhazardous waste injection wells, Class II, and Class III injection facilities require UIC permits. Class IV wells are prohibited under the state program. Class V wells are authorized and may be permitted by the Division of Water Quality on a case-by-case basis in order to protect USDWs.

The North Dakota UIC program requires all underground injection well (except Class V) owners to obtain a permit prior to operation. Permit applications are reviewed by the permitting agency and issued in accordance with that agency's water resource and environmental protection rules. As part of the permitting requirements, all Class I, II, and III injection wells must demonstrate mechanical integrity. All underground injection wells must comply with specific criteria identified in the permit to ensure protection of USDWs. The Division of Water Quality may request technical input and review from the North Dakota State Water Commission and the North Dakota Geological Survey prior to issuance of a Class I permit. These agencies must also provide approval prior to the issuance of any Class I permit.

Each permitting agency may invite permit applicants to a preapplication conference at which the applicant will receive a packet containing all necessary application forms, instructions on how to complete the application, and copies of applicable state statutes and regulations. The appropriate agency will review the detailed information submitted by the applicant regarding all aspects of the construction and operation of the facility, request additional information if necessary, and prepare a fact sheet and a draft permit. After the draft permit is transmitted to the applicant for comment, public notice will be given to allow a 30-day comment period. If there is a significant degree of public interest, the agency responsible for well oversight will hold a public hearing. If there are no significant comments on the draft permit, the permit will be issued.

After a permit is issued, any phase of well construction may be inspected for permit compliance by the permitting agency. Injection activities may not commence until construction is complete and in compliance with the permit.

Compliance monitoring is the responsibility of the permitting agency. This monitoring will, at a minimum, include on-site inspections conducted by the permitting agency, review of operating and monitoring reports submitted for permit compliance, and annual step rate injection tests.

If it is determined that the permittee is in violation of the permit conditions, enforcement action will be pursued by the permitting agency. Enforcement action may range from issuance of administrative orders to assessment of penalties by the appropriate court.

When a well is taken out of service it must be properly plugged and abandoned. Plugging and abandonment regulations for Class I and Class V wells are included in Chapter 33-25-01 of the North Dakota Administrative Code (Underground Injection Control Program). Regulations for plugging and abandonment of a Class III well are included in Chapter 43-02-02.1 of the North Dakota Administrative Code (Underground Injection Control Program).

North Dakota citizens are encouraged to actively participate in program development and the permitting process through public hearings and informational meetings.

### III. AGENCY ORGANIZATION AND STRUCTURE

#### A. General Responsibilities

The North Dakota Department of Health has the statutory authority to regulate all Class I, IV, and V injection wells through Chapter 61-28 of the North Dakota Century Code (Control, Prevention, and Abatement of Pollution of Surface Waters). The North Dakota Geological Survey, has the statutory authority to regulate all Class III injection wells through Chapter 38-12 of the North Dakota Century Code (Regulation, Development, and Production of Subsurface Minerals).

Each permitting agency has the following responsibilities specific to their associated statutory authority:

1. Administer the rules and regulations as they pertain to subsurface injections.
2. Perform technical evaluations of injection well applications and prepare draft permits.
3. Issue, deny, amend, or cancel permits.
4. Witness, at the discretion of the permitting agency, any aspect of construction, testing, operation, and closure of injection well activities.
5. Perform on-site certification of permit requirements.
6. Review operation reports for permit or rule compliance.
7. Provide recommendations of compliance strategies and corrective action when violations occur.
8. Maintain a data base of injection well information including quantity/quality of injected material, well construction, local geology, and the pertinent water resources that could be impacted.
9. Provide testimony in public hearings or enforcement proceedings as required.
10. Respond to public inquiries and complaints regarding proposed or operating injection facilities.
11. Ensure that the regulated community and the public at large are informed about underground injection activities.

12. Initiate and pursue appropriate enforcement action when permit regulations are violated.
13. Maintain permit files including information on the geology and hydrology (e.g., depth, name, and quality of USDWs) in the vicinity of injection wells along with other data submitted with the application.

#### B. Specific Responsibilities

##### 1. North Dakota Department of Health, Division of Water Quality

The North Dakota Department of Health is responsible for the implementation of most regulatory functions addressing human health and environmental issues as shown in Figure 1. The Environmental Health Section, a part of the North Dakota Department of Health, administers programs that regulate activities with the potential to impact environmental health or quality (Figure 2).

The Division of Water Quality is responsible for regulating activities that have the potential to impact water quality. The programs reflect a protection philosophy as mandated by Chapter 61-28 of the North Dakota Century Code (Control, Prevention, and Abatement of Pollution of Surface Waters), enacted in 1967, the Clean Water Act, and the Safe Drinking Water Act.

The following is a list and explanation of the major programs of the Division of Water Quality:

- a. North Dakota Pollutant Discharge Elimination System (NDPDES) Permit Program:  
The Department of Health obtained authority to administer the NDPDES permit program from EPA in 1975. These permits identify specific conditions, effluent limitations, and self-monitoring requirements for municipal/industrial wastewater discharges throughout the state.
- b. Storm Water:  
The Storm Water program issues three general types of permits: mining, industrial, and construction. The program encourages the use of best management practices to control runoff pollution.
- c. Industrial Pretreatment:  
The department is assembling its delegation package for the pretreatment program to gain program primacy and to regulate industrial discharges into sanitary sewers. It also provides oversight for local pretreatment programs.

**NORTH DAKOTA DEPARTMENT OF HEALTH**  
November 1, 1995

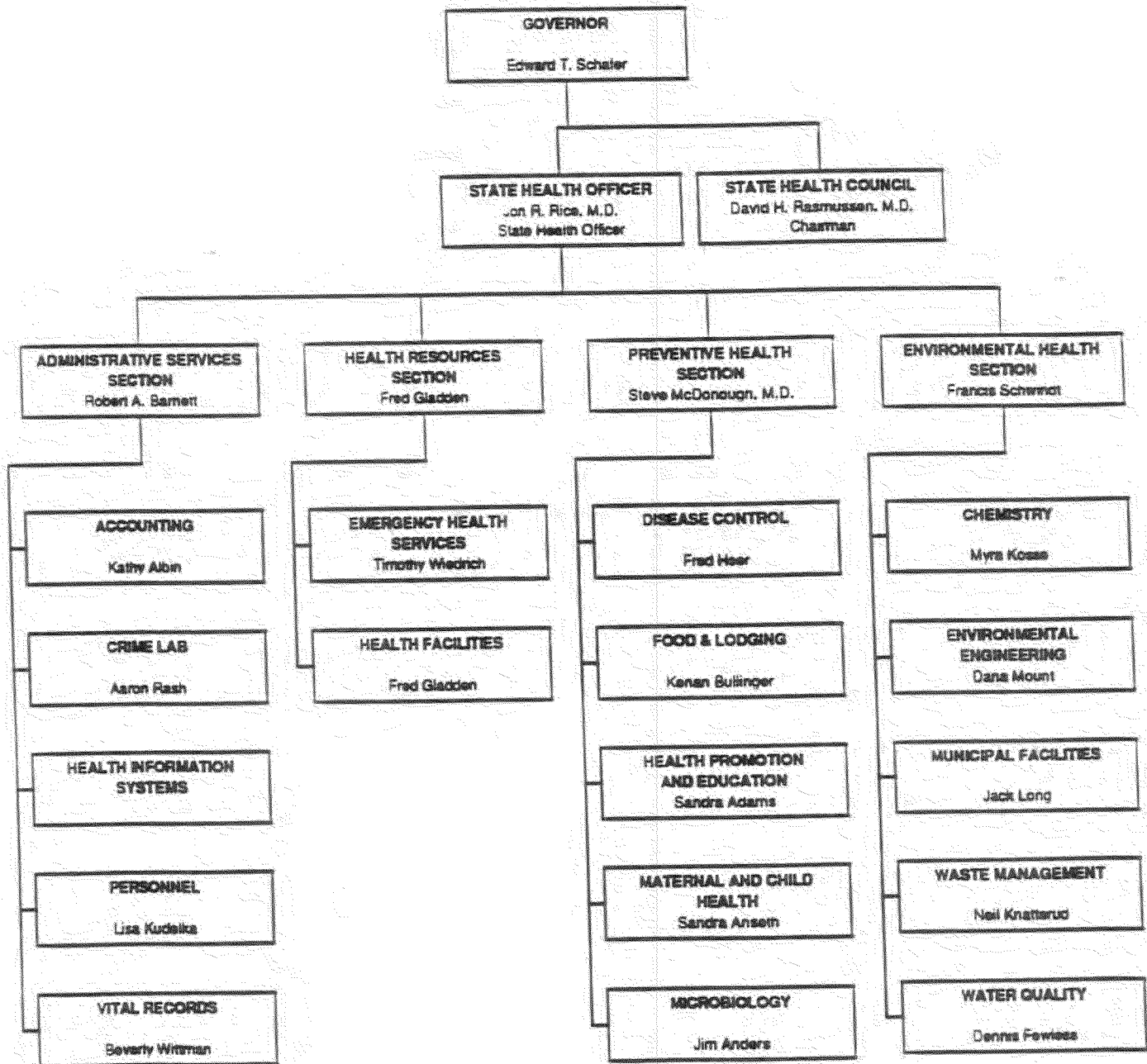


Figure 1

# ENVIRONMENTAL HEALTH SECTION

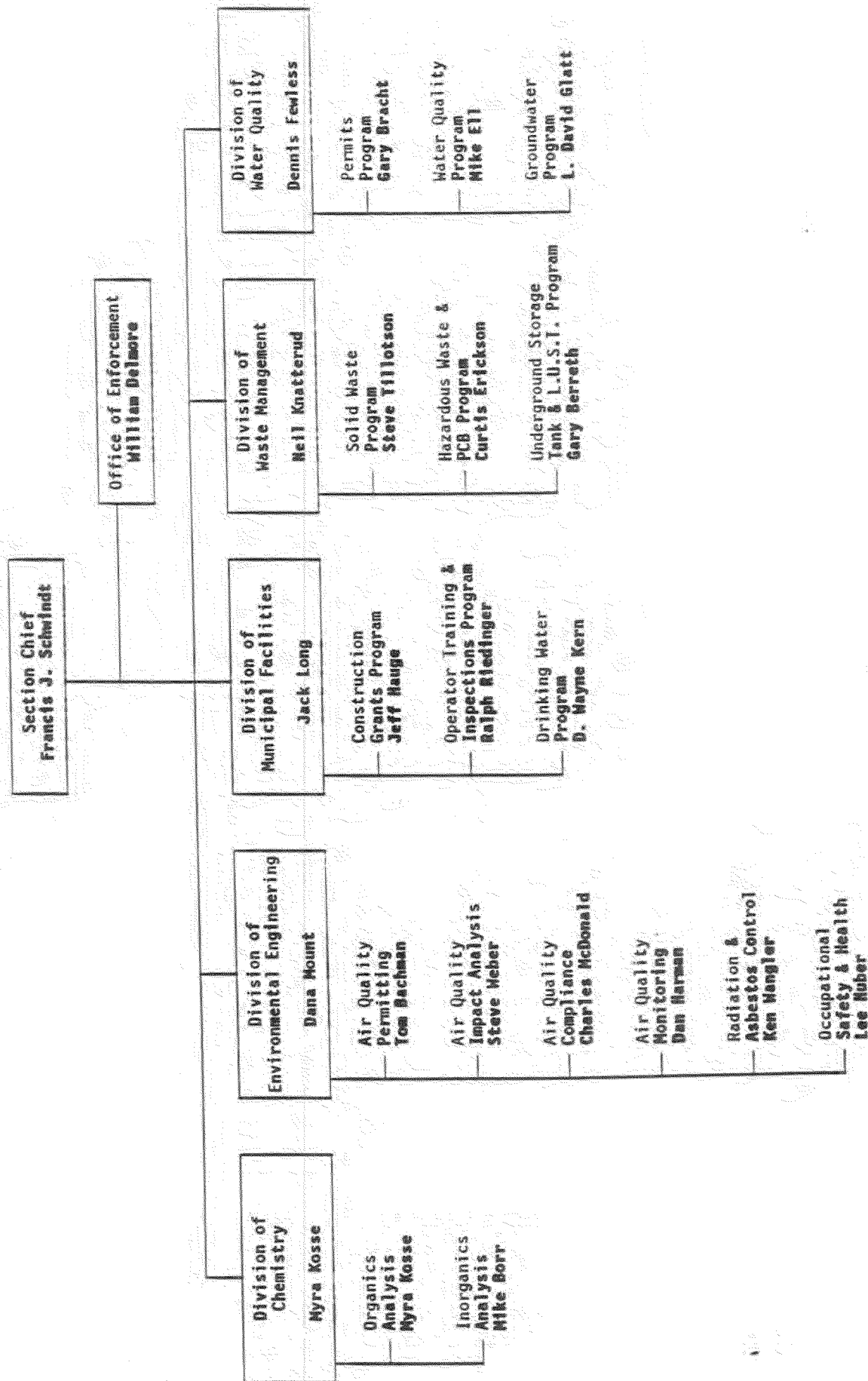


Figure 2

- d. Water Quality Standards - Water Quality Monitoring:  
The state first adopted water quality standards in 1967. At that time, the Department of Health established a monitoring program that provided current ongoing data on surface water quality.
- e. Nonpoint Source Pollution Management Program (319 Program):  
The 319 program is addressing water quality problems associated with construction, agriculture, and other soil-disturbing activities. The program has developed a plan to control these problems and is in the implementation phase.
- f. Groundwater Protection Program:  
Many of the existing North Dakota groundwater protection programs are source oriented and are designed to prevent groundwater quality degradation by controlling potential sources of contamination. This control is accomplished by contaminant source permit programs, effluent limitations, performance and design standards, and best management practices for point and nonpoint contaminant sources.

The Groundwater Protection Program regulates activities which have the potential to impact groundwater quality under the general authority granted by Chapter 61-28 of the North Dakota Century Code (Control, Prevention, and Abatement of Pollution of Surface Waters). Current responsibilities of the Groundwater Protection Program include the following:

- (1) Oversight of groundwater contamination remedial action activities at sites located throughout the state.
- (2) Administration of the North Dakota Wellhead Protection Program.
- (3) UIC Program activities.
- (4) Development of a statewide Comprehensive Groundwater Protection Strategy.
- (5) Special studies, including ambient groundwater quality monitoring of the major aquifers of the state.

## 2. North Dakota Geological Survey:

The North Dakota Geological Survey (Figure 3) is the primary source of geological information in the State. The North Dakota Geological Survey is responsible for the following tasks and statutory obligations:

- a. Provides accounting of the State's minerals and geology, including identifying the value and accessibility of these minerals, the preparation of maps and reports describing them, and the collection and preservation of specimens.
- b. Provides regulation of underground storage and retrieval of minerals and the terminal disposal of waste, including spent nuclear fuels.
- c. Administers the Class III UIC Program.
- d. Provides regulations for coal exploration.
- e. Regulates geothermal resource exploration and development.
- f. Provides for the regulation of subsurface mineral exploration and production.
- g. Conducts investigations designed to promote public understanding of the State's natural setting and natural resources.
- h. Operates and maintains a public repository for books, reports, maps, and other publications regarding the geology and mineral resources of the State.
- i. Participates on numerous environmental/health related boards and committees.
- j. Operates the State's Earth Science Information Center (ESIC) affiliate office. This office provides information about geologic, hydrologic, topographic, and land use maps, books, and reports; aerial, satellite, and radar images and related products; earth science and map data in digital form and related applications software; and geodetic data. This office also includes a retail sales outlet for federally produced cartographic products.
- k. Maintains one of the state's primary Geographic Information System (GIS) centers and, under a mandate of the Governor, operates the digital spatial data clearinghouse for GIS related data.
- l. Cooperates with other agencies to operate and maintain a Global Positioning System (GPS) community base station, and distributes the data.



### 3. North Dakota State Water Commission:

The State Water Commission manages the quantity of the state's water resources, including both surface water and groundwater. With the Governor as chairman, the State Water Commission consists of the Commissioner of Agriculture and five other members appointed for six-year terms by the Governor (Figure 4). The State Water Commission appoints a State Engineer to serve as secretary and chief engineer.

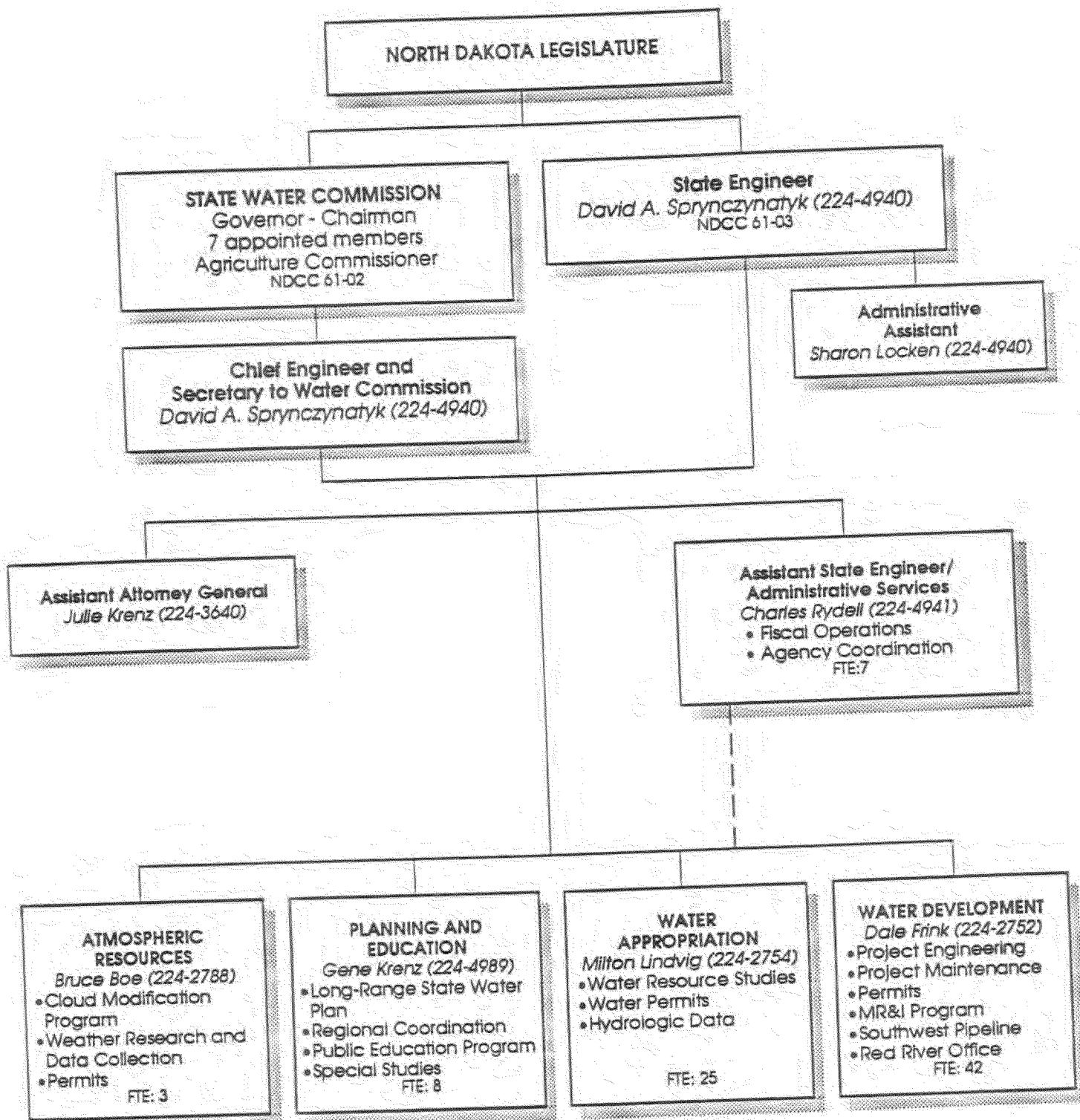
The objectives of the State Water Commission are to promote water conservation, flood control, and protection of water resources. The State Water Commission also cooperates with federal agencies in making water facility projects available to the public, inventories both surface water and groundwater, issues water appropriation permits and maintains a statewide master plan for future water resource development.

The State Water Commission, Division of Hydrology is responsible for programs that support the appropriation and management of the state's groundwater resources and has the following objectives:

- a. Identify the availability and quality of the state's groundwater and surface water resources.
- b. Conduct studies for municipalities and other public entities in an effort to seek a solution to a particular water supply problem.
- c. Assess impacts on existing water supply developments in an aquifer or watershed on water levels, stream flow, and water quality, for the purpose of appropriation and management.
- d. Construction and operation of predictive models that simulate hydrologic conditions for the purpose of developing viable water management programs and assist in the equitable allocation of resources in areas of development.
- e. Provide orderly processing of water permit applications for the equitable allocation of the resource.
- f. Provide recommendations on individual water permit applications to the State Engineer regarding the availability of water and impact on senior appropriations for the equitable allocation and management of the resource.
- g. Provide the orderly storage and retrieval of water permit records.
- h. Maintain a record of the use of each conditional water permit and water right.

# North Dakota State Water Commission

## Organizational Chart



TOTAL FULL TIME EQUIVALENTS OF 85 PERSONNEL

June 30, 1993

Figure 4

- i. Collect, store, and disseminate data on stream flow, groundwater elevations, water quality, and water use.

The State Water Commission has no statutory authority to regulate or control injection well activities. Their primary function is to cooperate with the Department of Health as requested regarding the UIC program. This is accomplished by:

- a. Providing technical assistance and evaluating injection well permits.
- b. Collecting, storing, and retrieving data on groundwater quality, groundwater use, and groundwater elevations.
- c. Warehousing data on aquifers and water wells, providing technical assistance and information about USDWs.

#### IV. STATE UIC PERMITTING PROCESS

The Division of Water Quality is responsible for the technical evaluation of injection well permit applications and for the formulation of permit provisions for Class I and V wells. The NDGS and the State Water Commission act as technical advisors in the permit review and approval process. The NDGS is responsible for the technical evaluation of injection well applications and drafting of permit provisions for Class III wells. If the State Water Commission or the NDGS have any comments or concerns they are addressed by the Division of Water Quality before the permit is issued.

##### A. Class I Injection Wells

###### Permit requirements:

In North Dakota, Class I injection wells may be used to dispose of nonhazardous industrial waste or treated municipal sewage below the deepest formation containing a USDW.

A preapplication conference between the applicant and the Water Quality staff is not mandatory but is recommended. The applicant will receive a preapplication packet which contains the following information:

- An application form with explanation and examples.
- Copies of all applicable state statutes and regulations.
- A listing of required information to be submitted by the applicant.

When the Division of Water Quality receives the application, it is reviewed for completeness with deficiencies noted and, if necessary, additional information will be requested. Each applicant must provide the information outlined in Chapter 33-25-01 of the North Dakota Administrative Code (Underground Injection Control Program) and the permit application.

##### 1. Required Information for Draft Permit

At a minimum, the Division of Water Quality will evaluate the following information before issuing a draft permit:

- a. A map(s) showing injection well location(s) for which a permit is sought and the applicable area of review. The map must show the number, name and location of all producing wells, other injection wells, abandoned wells, dry holes, surface water bodies, springs, mines, quarries, water wells, and other pertinent surface features, including residences and roads.
- b. A tabulation of data on all wells within the area of review which penetrate into

the proposed injection zone.

- c. Maps and cross sections indicating the general vertical and lateral limits of all USDWs within the area of review, their position relative to the injection formation, and the direction of water movement, where known, in each USDW which may be affected by the proposed Class I injection activities.
- d. Maps and cross sections detailing the geologic structure within the area of review.
- e. Generalized maps and cross sections illustrating the regional geologic setting.
- f. Proposed operating data which should include average and maximum daily rate and volume of fluid to be injected, average and maximum injection pressure, and source of the injection fluids which includes analysis of its chemical, physical, radiological, and biological character.
- g. Proposed formation testing program to obtain analysis of chemical, physical, and radiological characteristics and other information, as needed, on the receiving formation. Testing of the geologic material and the native water in a formation to be injected.
- h. Proposed stimulation program.
- i. Proposed injection procedure.
- j. Engineering drawings of the surface and subsurface construction details of the system.
- k. Contingency plans to cope with all shut-ins or well failure so as to prevent migration of fluids into any USDW.
- l. Corrective action plan to be taken for all wells (e.g., public, private, agricultural, industrial) within the area of review which penetrate the injection zone and are not properly completed or plugged.
- m. Construction procedures including the cementing and casing program, logging procedures, deviation checks, and a drilling, testing, or coring program.
- n. A certificate that the applicant has assured, through a performance bond, or other appropriate means, the resources necessary to close, plug, or abandon the well in a manner approved by the Division of Water Quality.

- o. Discussion of the qualifications and training of injection operations supervisory personnel.
- p. Any other information the staff requires to properly evaluate the application such as proposed observation wells, etc.
- q. Expected changes in pressure, fluid displacement, and direction of movement of injection fluid.

✓ The applicant must also provide:

- a. The plans for meeting monitoring requirements of 40 CFR 146.13 (b) and 40 CFR 146.68; and,
- b. Information on activities conducted by the applicant which requires a permit and a listing of all other environmental permits received as applied for by the facility.

## 2. Public Participation and Technical Evaluation

During the technical evaluation, the staff may require additional information to assist in determining if a draft permit should be prepared. Upon completion of the evaluation by the State Geologist and the State Water Commission, the Department of Health will tentatively decide whether to prepare a draft permit or to deny the application. If the Department of Health decides to prepare a draft permit, a public notice will be issued. The public notice will follow procedures as outlined in Chapter 33-25-01 of the North Dakota Administrative Code (Underground Injection Control Program).

If the Department of Health decides to prepare a draft permit, it will contain all required permit conditions, compliance schedule requirements, monitoring requirements and specific requirements for construction, corrective action, operation, hazardous waste management, reporting, plugging and abandonment, financial responsibility, mechanical integrity, and any other conditions that the Department of Health may impose. If the draft permit is for a Class I well, a fact sheet outlining items specific to the permit will be prepared.

✓ During the public comment period, any interested person may request a public hearing. If there is a significant degree of public interest in the draft permit, the Department of Health may hold a public hearing at its discretion. Notice of the public hearing is published in major newspapers at least 30 days prior to the hearing. The public notice will include information about the length of the comment period, contact person, and the address and phone number of the Division of Water Quality so interested parties can request copies of

the proposed permit. After the completion of the hearing, the hearing officer forwards findings of fact and recommendations to the Division of Water Quality. The Department of Health may then approve as written, modify and approve, or deny the application. The Department of Health will issue a response to all formal comments received during the hearing process.

The permit must be issued prior to the construction of a new well or conversion of an existing well. Existing wells will achieve compliance with underground injection control program requirements prior to permitting or according to a compliance schedule established as the permit condition. New injection wells will be in compliance with underground injection control program requirements prior to commencing injection operations.

The Division of Water Quality will consider the following information prior to granting approval for the operation of a Class I well:

- a. All available logging and testing program data on the well.
- b. A demonstration of mechanical integrity.
- c. The actual operating data.
- d. The results of the formation testing program.
- e. The actual injection procedure.
- f. The compatibility of injected wastes, with fluids in the injection zone and minerals in both the injection zone and the confining zone.
- g. The status of corrective action on defective wells in areas of review.

### 3. Plugging and Abandonment

Prior to granting approval for plugging and abandonment of a Class I well, the Department of Health will consider the following information:

- a. The type and number of plugs to be used.
- b. The placement of each plug, including the top and bottom elevation of each plug.
- c. The type, grade, and quantity of cement to be used.

- d. The method for well plug placement.

## B. Class III Injection Wells

Class III wells are used for the extraction of minerals which include mining of sulfur by the Frasch process, in situ production of uranium or other metals, geothermal wells, and solution mining of salts or potash.

The applicant will receive a preapplication packet which contains the following information:

1. An application form with explanation and examples.
2. Copies of all state statutes and regulations in regard to the permit.
3. A listing of all information which the applicant must submit.

When the North Dakota Geological Survey receives the application, they will review it for completeness and, if necessary, request additional information. All information requested in Chapter 43-02-02.1 of the North Dakota Administrative Code (Underground Injection Control Program) and the permit application must be submitted. At a minimum, the North Dakota Geological Survey will evaluate the same information as specified for Class I wells before issuing a permit.

Upon completion of the evaluation, the North Dakota Geological Survey will decide whether to prepare a permit or to deny the application. If a permit is prepared, a public notice is required. If a hearing is required or requested, notice of the public hearing will be published at least 30 days prior to the hearing date. At the hearing, the State Industrial Commission will receive comments. Upon reviewing the comments, the North Dakota Geological Survey will determine whether to deny or issue the permit.

The permit must be issued prior to the construction or conversion of a new well. Existing wells will achieve compliance with construction requirements prior to permitting or according to a schedule established as a permit condition. Injection wells must be in compliance with all requirements prior to commencing injection operations.

The North Dakota Geological Survey will consider the following information prior to granting approval for the operation of a Class III well:

1. All available logging and testing program data on the well.

2. A demonstration of mechanical integrity.
3. The actual operating data.
4. The results of the formation testing program.
5. The actual injection procedure.
6. The status of corrective action on defective wells in the area of review.

Prior to granting approval for plugging and abandonment of a Class III well, the North Dakota Geological Survey will consider the following information:

1. The type and number of plugs to be used.
2. The placement of each plug including the top and bottom elevation of each plug.
3. The type, grade, and quantity of cement to be used.
4. The method for placement of the plugs.

#### C. Class IV Injection Wells

Class IV wells are used to dispose of hazardous wastes or radioactive wastes into or above a formation which contains a USDW, within one-quarter mile of the well. Class IV wells dispose of hazardous wastes which cannot be classified under Class I wells (e.g., wells used to dispose of hazardous waste into or above a formation which contains an exempted aquifer).

All Class IV wells are prohibited except where used to inject contaminated groundwater as part of a groundwater remediation project. This is allowed if injection receives prior approval by the Department of Health pursuant to provisions for clean up of releases under the federal Comprehensive Environmental Response and compensation Liability Act (CERCLA) or the Resource Conservation and Recovery Act (RCRA). EPA rules provide flexibility for allowing these special Class IV wells under 40 CFR 144.13 (c). Class IV wells, not approved for operation, are typically identified, plugged, and abandoned according to Division of Water Quality guidance, followed by appropriate enforcement and/or remedial action.

#### D. Class V Injection Wells

Class V wells are all other injection activities not regulated in the Class I, II, III, or IV Programs.

The 10 general categories of Class V wells are:

“Beneficial Use Wells” which include a variety of well types used either to improve the quality or flow of aquifers or to provide some other benefit, such as preventing salt water intrusion or controlling subsidence.

“Fluid Return Wells” which are used to inject spent fluids associated with the production of geothermal energy for space heating or electric power, the operation of a heat pump, the extraction of minerals, or aquaculture.

“Sewage Treatment Effluent Wells” which are used to inject effluent from publicly or privately owned treatment facilities.

“Cesspools” which are wells that receive untreated sanitary waste. They may have open bottoms, and are typically located in areas not served by sanitary sewers. Under today’s proposal, only those cesspools having the capacity to serve 20 persons or more a day would be considered Class V injection wells subject to the UIC regulations.

“Septic Systems” which are wells comprised of septic tanks and fluid distribution systems (e.g., leach fields) used to dispose of sanitary waste only. Only those septic systems having the capacity to serve 20 or more persons per day would be considered Class V injection wells subject to the UIC regulations.

“Experimental Technology Wells” which include any injection well used as part of an unproven subsurface injection technology.

“Drainage Wells” which consist of a variety of wells used to drain surface and sub-surface fluids including storm water and agricultural runoff.

“Mine Backfill Wells” which are used to place slurries of sand, gravel, cement, mill tailings/refuse, or fly ash into underground mines. Mine backfill wells serve a variety of purposes ranging from subsidence prevention to control of underground fires.

“In-situ and Solution Mining Wells” which are used to liberate fossil fuels from the geologic formation which contains them or to bring minerals from underground deposits to the surface. They do not include wells specifically listed as Class III wells under 40 CFR §146.5.

“Industrial Waste Discharge Wells” which are used to inject wastewater generated by industrial, commercial, and service establishments.

Class V injection wells are authorized by rule; however, the Department of Health may require a permit based on the following:

1. The injection well is not in compliance with the applicable rule.
2. The injection well is not or no longer is within the category of wells and types of well operations authorized by rule.
3. Protection of a USDW requires the injection operation be regulated by requirements not contained in the rules.

## V. STATE COMPLIANCE MONITORING PROGRAM

### A. Plan Review

The permitting agency must verify that injection well facility construction, completion, operation, maintenance, and closure procedures are performed according to approved plans and specifications, and meet all permit or regulation requirements.

Verification of injection well activities is accomplished by reviewing appropriate plans and reports, performing on-site inspections, responding to complaints, and, where necessary, referring noncompliance to legal counsel for appropriate enforcement action.

Review of plans and reports may include but are not restricted to:

1. Revisions to construction plans filed after permit issuance.
2. Well completion reports including results of required logging and other testing.
3. Results of injectivity and pump tests, mechanical integrity tests, and any other required tests.
4. Bottom hole pressure reports and updated evaluations of the effects of injection on the injection zone, including fluid volume, injection rate, and injection pressure data.
5. Work over plans and work over reports describing construction or maintenance performed.
6. Revisions to plugging and abandonment plans and reports of completion of plugging, abandonment, and other site closure activities.
7. Any other plans or test results connected with the proper construction, operation, and maintenance of the well and associated surface facilities.

### B. Site Inspections

Site inspections to verify or witness construction, operation, and maintenance procedures may be conducted as necessary when certain construction operations begin, or in response to a complaint or other indication that a problem may exist. Construction elements and testing that may be witnessed or supervised by the permitting agency, include:

1. Setting and cementing surface casing.

2. Cementing long string casing.
3. Well logging and coring operations.
4. Pressure testing of tubing and casing.
5. Formation pressure tests, injectivity tests, or pump tests.
6. Installation and maintenance of instrumentation.
7. Work required by any corrective action plan.
8. Well work overs.
9. Placement of monitoring wells or other equipment.
10. Placement of cement plates or other abandonment procedures.
11. Mechanical integrity testing.

#### C. Complaints

Complaints alleging improper construction, completion, operation, or maintenance at an injection well facility are investigated by the permitting agency. Response to complaints may consist of:

1. Establishing the nature and authenticity of the complaint.
2. Reviewing appropriate Department of Health or North Dakota Geological Survey files.
3. Establishing contact with the operator to verify the complaint and discuss corrective action.
4. Performing a site inspection to determine if a problem exists.
5. Referring the complaint, after verification through appropriate investigation and documentation, to legal counsel, which could evolve into a hearing or litigation in court by the Department of Health.

#### D. Monitoring Program

The compliance monitoring program will be handled by the Division of Water Quality for all Class I and V injection wells and approved Class IV injection wells, and by the North Dakota Geological Survey for all Class III injection wells. Both monitoring programs will be similar, and the main objective of these programs is to verify attainment of and maintain compliance with provisions of the permits, rules, and other orders of the respective agencies. The objectives are achieved by:

1. Conducting inspections of injection well facilities.
2. Reviewing self-reporting, monitoring, record keeping, and certain operating and maintenance activities.
3. Investigating unauthorized injection activities and unauthorized facilities.
4. Participation in appropriate water quality sampling programs.
5. Responding to citizen complaints.

Site inspections will be conducted by the permitting agency. The inspections will be conducted at least annually for all permitted injection facilities in order to:

1. Determine the probability of a violation and indicate problems that may be causing or lead to violation.
2. Assist in identification of existing problems or any that have a potential for developing.
3. Update Department of Health or North Dakota Geological Survey records on the facilities and on operation of the facilities.

#### E. Annual Inspections

Annual inspections consist of (but are not limited to):

1. Observations of injection site, associated facilities, and monitoring wells.
2. Review of records to determine history of performance and compliance.
3. Evaluation of the operation and maintenance of the facility.

4. A review of all UIC permit conditions.
5. A review of all permit conditions such as NDPDES permits or solid waste permits.

F. Compliance Inspections

Compliance follow-up inspections may be conducted at any time to:

1. Determine existence of a violation.
2. Provide basis for enforcement action.
3. Define type of violation.
4. Provide data to assist in determining cause of violation.

During compliance follow-up inspections:

1. A compliance inspection report is completed.
2. A sufficient number of samples are collected to determine compliance.
3. Physical data are evaluated to define specific problem areas and develop generalized corrective measures.

Site inspections and examination of operator records will be conducted under the authority of Sections 38-12-02-4 (Regulation, Development, and Production of Subsurface Minerals) and 61-28-04-10 (Control, Prevention, and Abatement of Pollution of Surface Waters) of the North Dakota Century Code.

## VI. NORTH DAKOTA ENFORCEMENT PROCEDURES

Any person violating Chapter 61-28 of the North Dakota Century Code (Control, Prevention, and Abatement of Pollution of Surface Waters), any condition of a permit, or any rule or order of the Department of Health is subject to enforcement action. The Department of Health is responsible for initiating, pursuing, and resolving formal enforcement actions. Normal procedure dictates that reports of violation are forwarded to the Department of Health for investigation and appropriate action. The Department of Health (Environmental Enforcement Division) will maintain a log of proposed impending enforcement actions and will ensure such a log is kept current. Attorneys in the Environmental Enforcement Division also serve as the Assistant Attorney General and thus keep the Office of Attorney General informed of pending enforcement actions and any needs for staff assistance.

Prior to taking formal enforcement action, the Department of Health may:

1. By means of written correspondence an alleged violator will be notified of deficiencies and may require corrective action.
2. The Division of Environmental Enforcement will draft and issue a Notice of Violation to the alleged violator.

Formal enforcement proceedings may include:

3. Issuance of a letter detailing recommendations for corrective action and establishing a compliance period in which action will be taken.
4. Issuance of an administrative order by the Department of Health specifying corrective action and compliance schedule.
5. Signing of a stipulation between the Department of Health and the alleged violator establishing a compliance schedule for corrective action.
6. Conducting an administrative hearing (formal or informal) pursuant to Chapter 28-32 of the North Dakota Century Code (Administrative Agencies Practice Act) and Article 33-22 of the North Dakota Administrative Code (Practice and Procedure). Such hearing may result in a stipulated agreement or further enforcement action.
7. All enforcement proceedings may result in amendment, revocation, or suspension of any permit issued under authority of the State Underground Injection Control program.

If further enforcement action is required:

8. The state may seek civil penalty up to \$10,000 a day under Chapter 61-28 of the North Dakota Century Code (Control, Prevention, and Abatement of Pollution of Surface Waters) in district court.
9. The state also has the authority to seek an injunction or judicial enforcement of any order issued under Chapter 61-28 of the North Dakota Century Code (Control, Prevention, and Abatement of Pollution of Surface Waters). The Attorney General represents the Department of Health in all judicial actions.

Overall enforcement strategy of the Department of Health is based on the following concerns:

Priority No. 1: Remove any potential pollution problem as soon as possible.

Priority No. 2: Prevent such problems from causing any further damage.

Priority No. 3: Ensure that proper corrective or cleanup actions are taken.

Priority No. 4: Ensure that same type of violation will not occur again.

Priority No. 5: Seek civil penalty for violation.

The Department of Health will attempt to handle all minor violations through informal means or through use of correspondence between technical staff and the alleged violator. Enforcement staff will only be utilized if minor violations are not corrected in a timely fashion. The Department of Health will have, as its main concern, those violations which may have significant effect on the environment of the state of North Dakota and which may endanger valuable resources, such as aquifers.

It has been Department of Health policy to use only that amount of formal enforcement which is required to maintain compliance with the act.

The North Dakota Geological Survey has statutory authority over Class III wells under the auspices of Chapter 38-12 of the North Dakota Century Code (Regulation, Development, and Production of Subsurface Minerals). The legal staff of the North Dakota Department of Health will handle enforcement actions for the State Industrial Commission and will utilize methods and procedures for enforcement similar to those outlined above. The only notable difference in procedure is the State Industrial Commission's authority to seek a civil penalty up to \$12,500 per day for any statutory violation.

## VII. CLASS V WELL AUTHORIZATION BY RULE

### A. Authorization of Class V Underground Injection Wells

1. Authorization of injection into a Class V well is authorized indefinitely, subject to the requirements of Subsections 4, 5, and 6 of North Dakota Administrative Code Section 33-25-01-10 (Conditions Applicable to All Permits) and Subsection 3 of North Dakota Administrative Code Section 33-25-01-12 (Plugging and Abandonment).
2. The owner or operator of any existing Class V well will, within one year of the effective date of an underground injection control program, notify the Division of Water Quality of the existence of any well meeting the definitions of a Class V well, and submit the following inventory information:
  - a. Name of owner or operator of the well and legal contact.
  - b. Number of wells and location by township, range, and section.
  - c. Nature and volume of injected fluids.
  - d. Construction features of the well including: well depth, screened interval, and casing size and type.
  - e. Any other information which the Division of Water Quality requests that is pertinent to Class V injection activities.
3. If applicable, all new Class V wells will be in compliance with Chapter 43-35 of the North Dakota Century Code (State Board of Water Well Contractors) and submit to the Department of Health a log of formations penetrated and the inventory information requested in part 2 above.
4. General
  - a. The Department of Health may require the operator of a Class V well authorized by rule to apply for and obtain an individual or area permit. Cases where permits may be required include:
    - (1) The injection well is not in compliance with the applicable rule.
    - (2) The injection well is not or no longer is within the category of wells or type of well operations authorized by rule.

- (3) Protection of a USDW requires the injection operation be regulated by requirements not contained in the rules.
- b. Any owner/operator authorized by rule may request and be granted a permit and hence be excluded from the coverage by rule.
- c. All injection wells regulated by rule will submit inventory information to the Department of Health.
- d. Upon program approval, the Department of Health will notify owner/operator of injection well of their duty to submit inventory information.
- e. Rules will provide for the automatic termination of authorization for any well which fails to submit inventory information within one year of program approval.

#### B. Injection Well Inventory

The injection well inventory for the state of North Dakota is complete for Class I, III, and V wells. Basic information collected during the inventory includes:

- 1. Owner/operator (name and mailing address).
- 2. Nature of business.
- 3. Number of wells and location by township, range, and section.
- 4. Source of injected fluids.
- 5. Type and volume of injected fluids.
- 6. Significant construction features.
- 7. Length of time and operation.
- 8. Status of the well.
- 9. Average injection pressures.
- 10. Thickness and depth of injection formation.
- 11. Name of local contact for further information.

The data for inventory was obtained from:

1. Department of Health files, other state agency files, U.S. Geological Survey information.
2. Existing permit files.
3. Information supplied by identified operators.
4. Field investigations.

Class I and III wells which are regulated by the Division of Water Quality and the North Dakota Geological Survey will be inventoried quarterly and reported to EPA.

The Class V inventory was conducted by interviewing owners of selected types of businesses known to use injection well. The first inventory of the entire state was completed in 1995. Inventory information is entered in the Class V inventory database as it is collected. Updates and revisions of the inventory survey will be completed as needed.

#### C. Underground Sources of Drinking Water

Under federal definition, USDWs are aquifers which contain water currently used for human consumption or which contain 10,000 milligrams per liter or less total dissolved solids. Federal Underground Injection Control regulations promulgated under the authority of the Safe Drinking Water Act, are directed to the protection of USDWs.

As described in state regulations, any underground water being used for drinking or domestic water, or any underground water less than 10,000 milligrams per liter of total dissolved solids which has not been exempted, is a source of drinking water and is protected as such. However, after notice and opportunity for public hearing, the Department of Health may designate, identify, and describe in geographic or geometric terms, or both, which are clear and definite exempted aquifers or parts thereof using the following criteria:

1. It does not currently serve as a source of drinking water.
2. It cannot now and will not in the future serve as a source of drinking water because:
  - a. It is mineral, hydrocarbon, or geothermal energy producing.
  - b. It is situated at a depth or location which makes recovery of water for drinking water purposes economically or technologically impractical.

- c. It is so contaminated that it would be economically or technically impractical to render that water fit for human consumption.
- d. It is located over a Class III well mining area subject to subsidence or catastrophic collapse.
- e. The total dissolved solids content of the groundwater is more than 3,000 and less than 10,000 milligrams per liter, and it is not reasonably expected to supply a water system.

#### D. Class V Wells

In 1983, the Department of Health submitted its assessment and recommended regulatory strategies to EPA. The following is an outline of the Class V assessment process:

1. Review inventory data for each type of Class V well.
2. Based on initial review, determine which category of wells might require different construction, operating, monitoring, or reporting requirements from those provided by the authorization by rule.
3. For each well category that might need more regulation, obtain additional data on site geology, well construction, operating characteristics, fluid characteristics, etc. for a representative sampling of those wells. Additional information will be obtained by:
  - a. Requesting additional data from the owner/operator.
  - b. Consulting the Department of Health and other state agency files.
  - c. Performing site investigations.
  - d. Initiating a water quality sampling program.
4. Analyze the data and determine if the wells are operating so as to threaten fresh water.
5. If no hazard is determined, then recommend continuation of regulation under the current authorization.
6. If a hazard does exist, then determine the additional construction, operating, monitoring, or reporting requirements necessary to eliminate the hazard.
7. Prepare a report summarizing the result of the inventory and Class V assessment.

and containing recommendations for the regulation of Class V wells.

8. Initiate special studies as determined by initial phases of the assessment.

Section 33-25-01-16 of the North Dakota Administrative Code (Authorization of Class V Underground Injection Wells) requires the owner or operator of any Class V injection well to notify the Department of Health of its existence and provide inventory information within one year of effective date of the state's UIC program. The inventory information will include:

1. Name of owner or operator of the well and legal contact.
2. Number of wells and location by township, range, and section.
3. Nature and volume of injected fluids.
4. Construction features of the well, including well depth, screened interval, and casing size and type.
5. Any other information which the director requests.



## VIII. REPORTS

The Department of Health will prepare and submit to EPA the following underground injection control program reports concerning Class I, III, IV, and V wells:

A. Quarterly Program Reports consist of the following:

1. EPA Form 7520-1 Part I: Permit Review and Issuance/Wells in Area of Review
2. EPA Form 7520-2A Part II: Compliance Evaluation
3. EPA Form 7520-2B Part III: Significant Noncompliance
4. EPA Form 7520-3 Part IV: Inspections, Mechanical Integrity Testing

Quarterly reports will be submitted in accordance with the following schedule:

<u>Quarter</u>	<u>Report Due to Regional Administrator</u>
October, November, December	January 30
January, February, March	April 30
April, May, June	July 30
July, August, September	October 30

B. Annual program reports will be submitted to the regional administrator by December 1. The report is for the period of October 1 through September 30 (federal fiscal year) and will consist of the following:

1. EPA Form 7500-48 Inventory of Inspections Wells
2. A well inventory consisting of the facility name and ID, location, well type, and well status.
3. A summary of the major program activities during the fiscal year as identified in the work plan.

C. A financial status report will be submitted annually to EPA after the close of a grant period, in accordance with the Block Grant reporting requirements.

This is the current status of UIC reporting. A reduction in reporting requirements may occur in the future.



## IX. UIC FUNDING AND STAFFING REQUIREMENTS

North Dakota Department of Health, Division of Water Quality

Currently the staffing requirement for the UIC program is 2 FTEs (1 FTE=\$50,000/yr). However, this may be modified based on actual work load, or the requirement to address priority issues relating to UIC activities. Specific work plan items are identified in the biennial State/EPA agreement.

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